

A LEXICON FOR CAMERA OBSCURA

by

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B.F.A., Minneapolis College of Art and Design  
(1982)

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF

MASTER OF SCIENCE IN VISUAL STUDIES

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
June 1984

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Submitted to the Department of Architecture  
on May 8, 1984  
in partial fulfillment of the requirements for the degree  
of Master of Science in Visual Studies

ABSTRACT

The camera obscura has allowed artists, scientists, and philosophers to view the world as a flat image. Two-dimensional renditions of visual reality seem to be more manageable and easier to grasp than reality itself. A Lexicon for Camera Obscura is a survey of facts and lore about the author's use of camera obscura as a metaphorical vehicle to comment about reality.

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## Table of Contents

I. Notes on the Camera Obscura.....	4
II. The Camera Obscura in My Art and Writing.....	12
III. Beyond the Camera Obscura: My Projection Apparatuses.....	31
IV. About My Lexicon.....	42

## I. Notes on the Camera Obscura

## Notes On The Camera Obscura

Light entering a dark room (or box) through a small opening casts an inverted and reversed image of the view outside onto the surfaces adjacent and opposite the aperture. This effect, known as the camera obscura phenomenon, was observed in ancient times. A chamber where this phenomenon occurs is called a camera obscura. Camera and obscura are derived from the Greek word kamara, meaning chamber, and the Latin word obscurus, meaning dark. The history of the camera obscura illustrates man's desire to grapple with visual reality. A brief description of this history follows:

Mo Ti of China, wrote the first known account of the camera obscura phenomenon in the fourth century B.C. His account refers to making an upside down image by means of a pinhole in a screen. The screen, placed before a window has been translated as a "collecting place," since rays of light gather or collect at the pinhole.

Aristotle, in the fourth century B.C., also saw the camera obscura phenomenon. On the ground below a tree during a solar eclipse, he observed many crescent-shaped images of the sun. He attributed this to the small spaces between the leaves. Aristotle then extended the same observation to the holes of a sieve, to the small gaps in wicker work, and to the small holes made by crossing the fingers of one hand over the other. What apparently struck him was that the image of the sun always remained round or, as in the case of an eclipse, crescent-shaped, no matter what the shape of the aperture was.

In the early ninth century A.D., Shen Kua of China compared the inversion of light rays projected through an aperture to an oar in an oar lock: when the oar handle is down, the blade is up. From there he made an analogy

between the inverted image and the manner in which people misunderstand a situation. Indeed there are some people, he elaborated, so fixed in their judgements that they cannot avoid "seeing things upside down."<sup>1</sup>

By the thirteenth century, astronomers were using the camera obscura to observe solar eclipses. In 1290, the French astronomer St. Cloud wrote of people who had found their vision impaired for several days after staring too intently at a solar eclipse. He suggested they should make a small hole in their roof facing the eclipse. With a flat screen placed opposite the hole, about twenty feet away, the image would be inverted and larger, but weaker so as not to harm the eyes.<sup>2</sup> Later astronomers would adapt their telescopes to project the sun onto the walls of their laboratories. In this manner, the transits of Venus and Mercury across the sun were first observed.

The first significant improvement to the camera obscura was the insertion of a bi-convex lens in the aperture to form a sharper and brighter image. Its use was first suggested by Girolamo Cardano, a Milanese physician, in 1550.<sup>3</sup>

In his famous book on perspective, La Practica della Perspettiva (1568), Daniello Barbaro, a Venetian architect, mentioned a camera obscura fitted with a biconvex lens. Barbaro wrote:

Having made a hole as large as a spectacle glass in the window (shutter) of the room from which you wish to observe, take an old man's spectacle glass, convex on both sides, not concave as the glasses of youths with short sight. When this is fixed in the hole, shut all the doors and windows of the rooms so that no other light may enter except by the lens. If you then take a sheet of paper and place it in front of the lens, you will clearly see on the paper all that goes on outside the house. This you will see most distinctly at a certain distance, which you will

find by moving the paper nearer to or further away from the lens, until you have found the proper position. Here you will see the images on the paper as they are, with their gradations, colors, shadows, movements, clouds, the rippling of water, birds flying, and everything else, if the sun is shining brightly, for the sunlight has great power in bringing out the visible images.

Barbaro was the first to suggest camera obscura as a drawing aid. His account follows:

When you see, therefore, on the paper the outline of things, you can draw upon the paper with a pencil the entire perspective, and the shading and coloring as in nature; holding the paper firmly until you have finished drawing.<sup>4</sup>

Battista della Porta, a flamboyant character, has often been falsely identified in encyclopedias and history books as the inventor of the camera obscura. This credit is probably due to his collection of scientific and natural history information, facts, and lore, published in 1588. Porta's book included some interesting entries regarding his use of the camera obscura. The most imaginative use involved entertaining audiences. He explained at length about "how in a camera obscura you may see hunting, battles of enemies, and other delusions." He arranged elaborate theatrical productions on a sunlit stage just outside the room-size camera obscura, with scenery, actors in costume, animals, and musicians. The audiences inside the camera obscura, unaware of the theatrical stage set up outside, were so thoroughly taken in by the spectacles they saw projected on the screen (white sheet), that they accused Porta of sorcery. This kind of entertainment was the earliest forerunner of the cinema.<sup>5</sup>

Through most of the seventeenth century, small wooden table-top camera obscuras appear to have been normal equipment among amateur portrait

artists. (Professional artists were skilled at drawing and did not have to rely on camera obscuras.) Most table-top models featured reflex viewing systems. A reflex viewer involves the placement of a mirror at a 45° angle behind the lens to direct the image onto a ground glass screen situated on the top side of the box. The advantage to such a viewing system is that, due to a mirror, the image appears right side up on the screen.

Later on, tent camera obscuras became popular among amateur landscape artists. The artist would stand inside a cone-shaped tent and draw on a table which functioned as the projection screen. Above the lens, situated at the top of the tent, was a mirror placed at a 45° angle. It directed the view of the horizon onto the table. The appeal of tent camera obscuras rested in the ease with which they could be packed and carried in a valise.<sup>6,7</sup>

Little is known about the use of the camera obscura by professional artists. Nevertheless, art historians often cite the Dutch artist Johannes Vermeer, 1632-1675, as having used one. Since Holland was an important center for grinding lenses, superior optical devices were readily available.

Although there is no documentary evidence to prove Vermeer used a camera obscura, one can infer he must have. The accentuated perspective and heightened color and contrast so characteristic of camera obscura images, often appear in his paintings. In a camera obscura image, a bright object set before a dark background appears to be haloed; Vermeer often employed a similar halo effect in his portraiture. In a camera obscura image, the highlights reflected off a smooth or lustrous surface appear as bright round dots of light. In his paintings these effects are manifested by dots of paint.<sup>8,9</sup>



Although Vermeer's paintings resemble camera obscura images, they do not always adhere to the principles of lens optics. He did not use a camera obscura for sketching directly onto canvas. He used a camera obscura for observing space, light, and shadow. The flat, distorted camera obscura image revealed a syntax for exaggerating and compressing reality.

Photography ultimately led to the demise of artists' use of camera obscura as a drawing aid. In 1725, Johann Heinrich Schulze, a professor of anatomy at a leading German university, discovered that silver salts darken when exposed to light. However, not until the late 1700's was this phenomenon used in photographic experiments. In 1826, Nicéphore Niépce, a French gentleman, made the first successful photograph by replacing the viewing screen of a portable camera obscura with a light-sensitive plate. This use of camera obscura to make images "direct from nature" ultimately led to the transformation of simple box and lens arrangements to more sophisticated cameras incorporating shutters, superior optics, and special backs designed to accept light-sensitive plates. With the invention of photography, the camera obscura evolved into the camera.<sup>10</sup>

A camera obscura image corresponds directly to light rays reflected off of surfaces and to light rays emitted by light sources. In this manner, a camera obscura image is a faithful, albeit reduced, facsimile of reality. The camera obscura has allowed artists, scientists, and philosophers to view the world as a flat image. Two-dimensional renditions of visual reality seem to be more manageable and easier to grasp than reality itself.

## FOOTNOTES

1. John Hammond, The Camera Obscura (Bristol, Great Britain: Adam Hilger Ltd., 1981), pp. 1-5.
2. Helmut and Alison Gernsheim, The History of Photography (New York: McGraw Hill, 1969), p. 18.
3. Helmut Gersheim, A Concise History of Photography (New York: Grosset and Dunlap, 1965), p. 11.
4. Gernsheim and Gernsheim, p. 22.
5. Ibid.
6. Brian Coe, Cameras (United States: Crown Publishing, Inc., 1958), p. 9.
7. Hammond, p. 118.
8. Arthur K. Wheelock, Jr., Jan Vermeer (New York: Abrams, 1958).
9. Piero Bianconi and John Jacob, The Complete Paintings of Vermeer, from the "Classics of World Art" series (London: Weidenfeld and Nicolson, 1970).
10. Gernsheim, pp. 15-20.

## BIBLIOGRAPHY

- Bianconi, Piero and John Jacob. The Complete Paintings of Vermeer (from the "Classics of World Art" series). London: Weidenfeld and Nicolson, 1970.
- Bunel, Peter C. and Robert A. Sobieszek. The Wonders of Light and Shadow (from "The Literature of Photography" series). Reprinted from 1851 ed., New York: Arno Press, 1973.
- Coe, Brian. Cameras. U.S.: Crown Publishers, 1978.
- Gernsheim, Helmut. A Concise History of Photography. New York: Grosset and Dunlap, 1965.
- Gernsheim, Helmut and Alison Gernsheim. The History of Photography. New York: McGraw Hill, 1969.

Hammond, John H. The Camera Obscura. Great Britain: Adam Hilger Ltd., 1981.

Pollack, Peter. The Picture History of Photography. New York: Abrams, 1965.

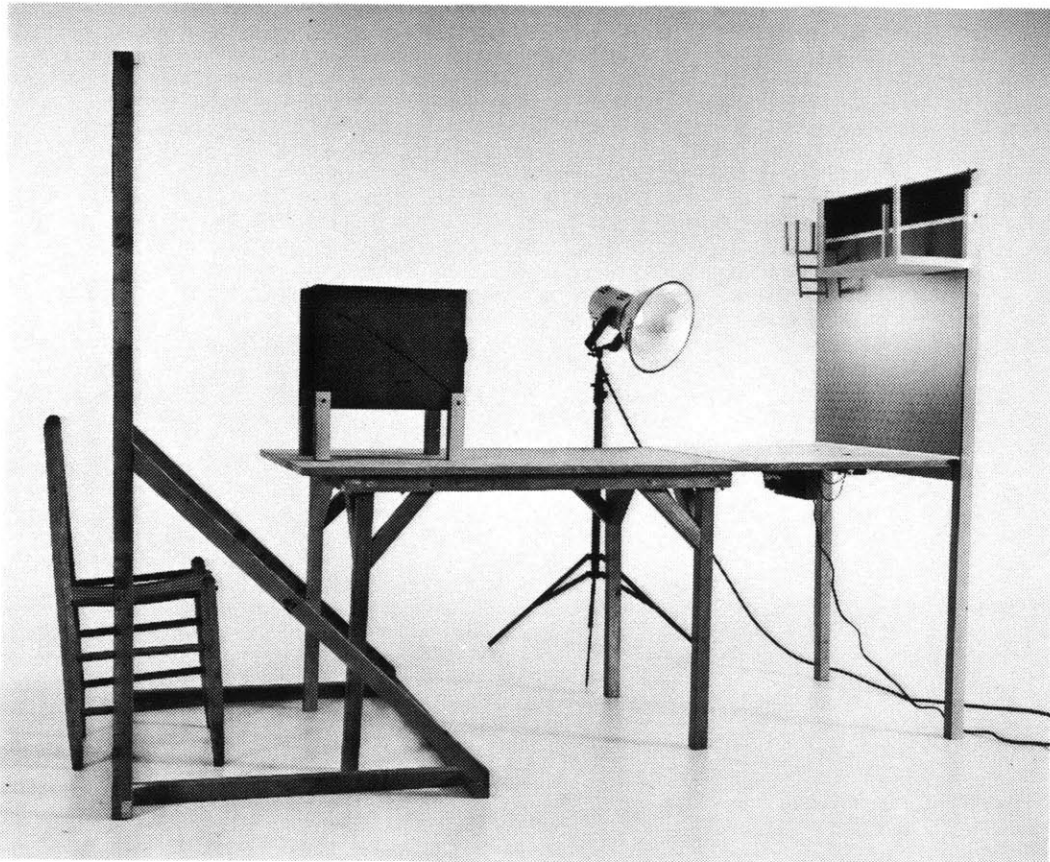
Wheelock, Arthur K., Jr. Jan Vermeer. New York: Abrams, 1981.

## II. The Camera Obscura In My Art and Writing

Camera Obscura For Table And Chair

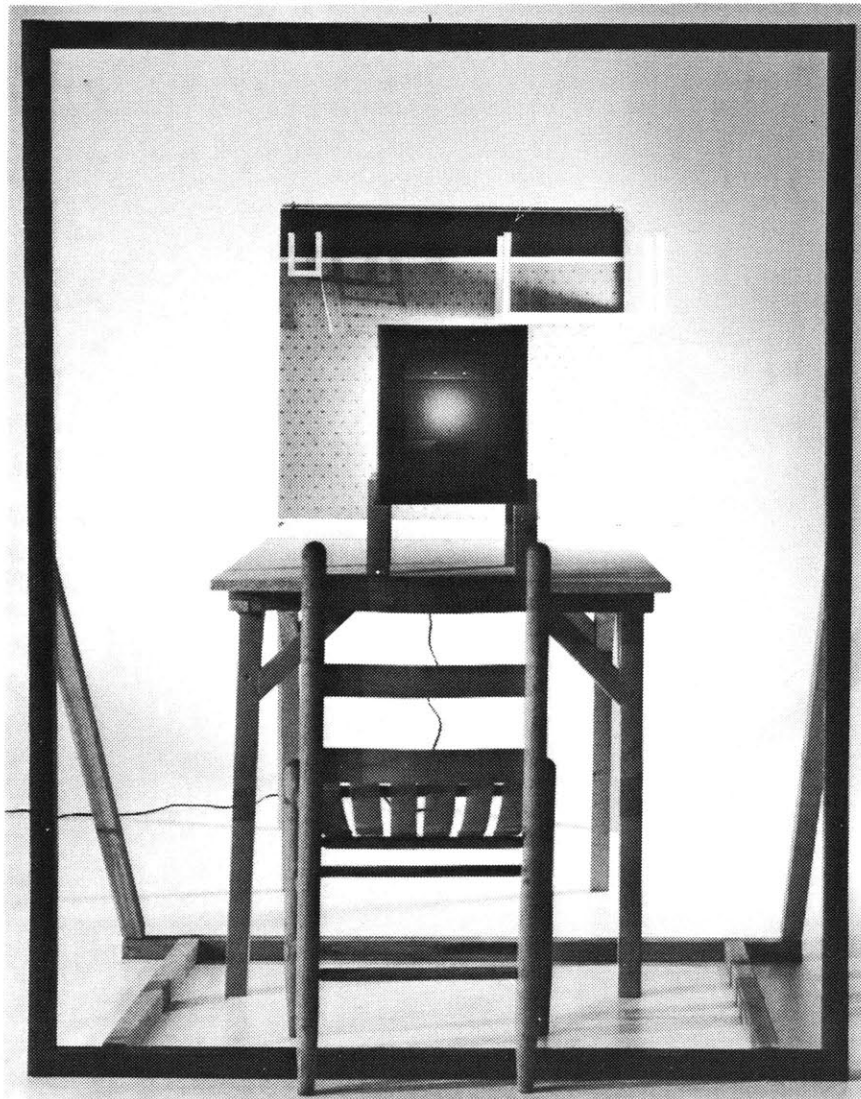
Materials: Wood, cardboard, wallpaper, lens, ground glass, 12 volt lamps and power supply, photo flood light, kite string, and miscellaneous hardware.

Dimensions: 7' X 2½' X 5½'.

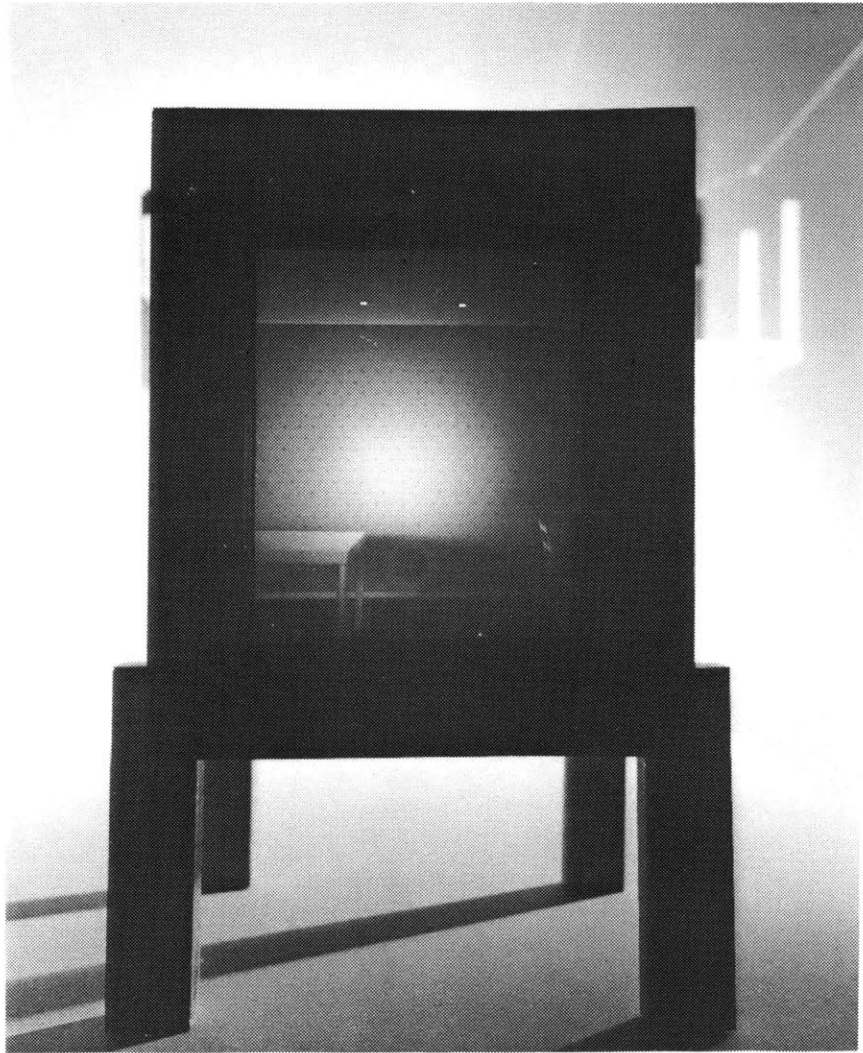


CAMERA OBSCURA FOR TABLE AND CHAIR  
(lateral view)

A miniature table and chair are suspended upside down by kite string in front of a camera obscura. Ambient breezes cause the models to sway as they appear right side up on the camera obscura's ground glass focusing screen. Perhaps our notion of reality is as fragile as the kite string and the cardboard table and chair.



CAMERA OBSCURA FOR TABLE AND CHAIR  
(anterior view)



CAMERA OBSCURA FOR TABLE AND CHAIR  
(the camera obscura image)

## How To Convert An Ordinary Room Into A Camera Obscura



1. Select a room with a window overlooking a spacious view. To avoid direct sunlight, if possible, choose a window facing north. Direct sunlight degrades the quality of a camera obscura image.





2. Block out the selected window and all other windows with an opaque material. Black plastic, available at most hardware stores, is quite effective. Plastic is rather inexpensive and attaches easily with gaffers' tape or push-pins.



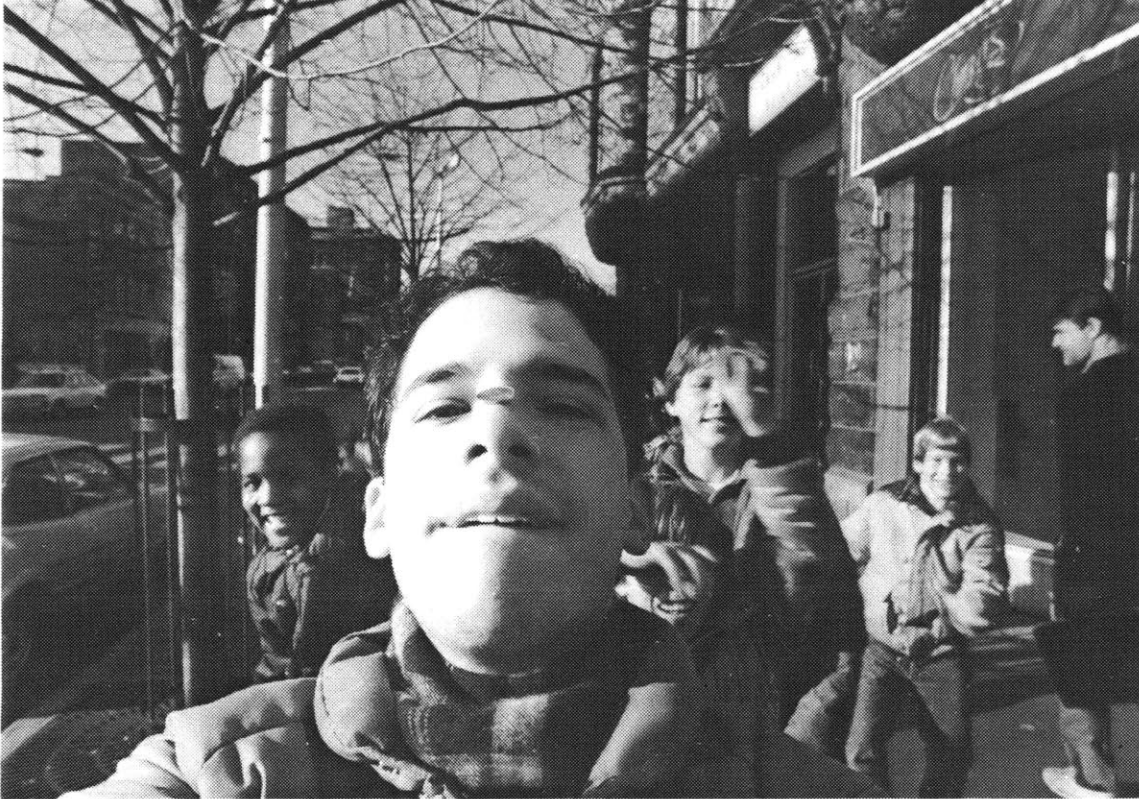
3. Make a hole, about the size of a penny, in the center of the selected window.

A larger hole will render a brighter but fuzzier image and a smaller hole a fainter but sharper image.



4. Once the preceding steps have been completed, close any door allowing light into the room, and/or turn off all artificial lights. An inverted and reversed image of the outside view will appear on the walls and ceiling.

A Man And His Penny



Random shapes and colors of cars and trucks rushed across the ceiling while cumulus clouds dappled the wrinkled white sheet covering his naked body. The walls vanished behind a panorama of upside down apartment houses. -- Everything topsy-turvy, his bedroom was a camera obscura.

Although Richard had slept well, he spent the day supine in bed. He lay, mesmerized by the faint image of Block Avenue projected onto the ceiling. The phone, however, roused him from his trance. He hadn't talked to anybody for three days. By the third ring, he stood in the bright and sparsely furnished living room with receiver in hand.

"Hello." He squinted; a large window let too much sunlight into the

white room.

"Hello, is this Richard Paile?"

"Yes, this is he." He tugged at his penis.

"Ah, good. This is Thelma Rastik for Mediascope Inc.--I'd like to ask some questions about your television viewing..."

"I'm not interested."

"I didn't ask if you were interested." She hesitated. "I don't care what you think!" Click; she hung up.

He wandered back into the bedroom and closed the door. His eyes, no longer dark-adapted, fixed on the hole cut into the otherwise light-tight venetian blind. (This hole, aperture, was really just the simplest lens and through it, the view outside projected into his room.) He walked over to the window and opened the blind. Light flooded into the room and bleached out the faint projections. He then flopped into the overstuffed chair situated near the window.

His body rocked slowly back and forth as he perused Block Avenue four stories below. A television repair truck, with a rainbow painted across its side, double parked and blocked the entrance of the flower shop. Across the street, a family, clad in parkas, ascended the steps of a brownstone. Then a motorcycle sputtered by, followed by a hearse and a long procession of automobiles--all with their headlights on.

A church bell rang three times; the movie he planned to see wouldn't start for another hour. With his bare feet now propped against the window sill, he took the venetian blind cord, looped it around his index finger, and then moved his arm back and forth like a piston. The venetian blind thus opened and closed again and again in such a manner that the room was

successively transformed from bedroom to camera obscura. The aluminum slats dragging against the window frame sounded like somebody cutting a two-by-four with a handsaw. In the process, his arm grew weary. When he finally let go of the cord, the bottom slats crashed against his feet. Now he sat in the dark. "Oh what to do, what to do, what to do," he sighed.

Aside from errands, work, and the weekly session with his psychiatrist (his work benefits included comprehensive health insurance), Richard either sat in his bedroom or went to movie matinees. His job as a night watchman afforded him plenty of time to read at work, so he seldom read at home. Although record albums, mostly bop, were strewn all over his apartment, he rarely listened to them anymore. Once he offered them, at a fractional price, to a young jazz musician, but the musician was broke and declined his offer. Richard offered to let him pay later, but the musician declined again and asked why he was so eager to part with his records. "I don't need them," he said, "I already know every chord, every rhythm, and every melody of every tune. --I even know which cuts are hopelessly scratched. Matter of fact, sometimes I while away the time by recalling alphabetically which cuts cause the needle to skip."

He picked some loose change off the desk and stuffed it all, except for a penny, into his pants pocket. He then walked back over to the window and held the penny over the aperture. As if somebody had capped the lens of a motion picture projector, the room became pitch black. Except for the rumble of street traffic, nothing entered.

"Ladies and gentlemen," he bellowed, "I am honored to present this special preview of a soon-to-be-released feature film; it took twenty-four

years to produce." He then uncapped the aperture and the room filled with projected light. He saluted the window and then performed a military-style about face. "The name of the film is: tah, tatah, tah, tah, tah, tahhhh--- 'A Man and His Penny'." Richard waved the penny around in an elaborate zig-zag fashion and then placed it on the broad bridge of his nose. "Camera man: zoom out!" He spread his arms wide. "I want a shot of the whole room now." He took one step back and pointed to an imaginary microphone suspended from a boom. "Do we need a sound level? one, two, three testing. Look at this." He pointed to the image of the street projected on the ceiling. "I want more traffic here. Buses and trucks please. How about a couple school buses." Richard then swiveled around to face the aperture. "Yes ladies and gentlemen, it took twenty-four years, my entire life, to produce this film. Tatah, tatah, tatah, tatahhh---." He then marched into the bathroom.

While urinating, he saw his face reflected in the mirror. (His lips were full and sensuous, his hair curly, and of course, his nose broad and fleshy. In high school his peers had referred to him as the White Negro.) After he flushed the toilet, he moved closer to the mirror and rotated the penny to orient Lincoln right side up. Although only a single fluorescent bulb flickered from above, his reflection was bright. "Cut and print!" he shouted, "everybody take five."

It was almost four o'clock when he left the apartment. Although he walked briskly to the theater, the penny remained firmly on his nose so long as he kept his chin up. Whenever he passed a store front window or a glass door, he couldn't resist the urge to check his reflection. A couple of

college girls passed him: A tall pimply redhead leaned over to her friend, a short blond, and commented, "Did you see that guy with the penny on his nose?" The blond tilted her head back, crinkled her nose, and giggled. A group of children responded enthusiastically: "Hey mister, you know you got a penny on your nose?" A bespectacled little girl with a cleft chin unsuccessfully tried to set a penny on her nose. A tiny boy had a paroxysm. He jumped up and down, wildly flailed his arms about, and yelled, "I can do that. Let me try. Hey gimme that penny; give it to me now!" He then twisted the little girl's arm, forcing her to relinquish the penny. After numerous unsuccessful attempts, the boy hurled the penny back at the little girl and accused Richard of using glue.

When Richard ascended the steps of the magnificent old theater, a smartly dressed businessman glanced at him in passing and then did a double-take followed by a short guffaw. Richard continued his ascent and entered the lobby. The floors and walls were polished marble. Elegant chandeliers punctuated the vaulted ceiling and imperceptibly swayed. The ticket counter, an octagonal glass and bronze enclosure, was situated near the front of the lobby.

The woman inside smiled generously when she handed over his ticket. "How do you do that?" she asked.

He shrugged his shoulders. "Oh, it's genetic I guess." He then quickly removed the penny and ran his finger down the slope of his nose.

"How about that," she said.

He nodded, set the penny back on his nose and walked into the auditorium.

The previews had already started. Richard's eyes hadn't yet adjusted



to the darkness, so he floundered around until landing on a center row seat flanked on either side by empty seats. He kept his parka on and continued to balance the penny. The feature was a tour de force about how prehistoric man survived before and after the advent of domesticated fire. The sound track mainly consisted of grunts and groans and after an hour, Richard became fidgety. Every time bright light reflected off the screen, which happened often due to the content of the film, he would tilt his head to either side and direct the light gleaming off the penny onto somebody's face. But nobody noticed and after awhile Richard ceased to be amused and was anxious, so he walked out of the theater into the dusk.

A gust of wind knocked the penny off his nose. Tinka, tinka, tinka; it proceeded him down the steps of the theater and rolled out onto the sidewalk. Since it hardly seemed worthwhile to hunt for it, he groped inside his pockets and found another penny. He placed it on his nose and put on a pair of gloves. Moments later the new penny slid off. Right after he set it back, a gust of wind knocked it off again. Although he kept his chin up and walked slowly, the new penny wouldn't stay put. A large black woman clad in a ragged fur coat commented, "I just can't imagine why you is having so much trouble keeping that coin on your nose."

"Isn't it obvious?" snapped Richard. "It's too bitter cold and windy outside for anything to work."

She stood silently for a moment. "Ha! Not a bad excuse. Maybe you should move to Florida." She waddled away.

"I'll just go back to my warm apartment! he shouted.

After dinner he rode the subway to work. As he sat inside the train, sans penny, he mused over how all he needed to do, to become visible -- a celebrity-- was to place a coin onto the bridge of his nose. He then produced from his coat pocket a pencil and a tattered scrap of paper. He wrote a note to himself:

Paile Productions Presents:

"A Man and His Penny"

Directed by Richard Paile

Starring Richard Paile

Filmed in Technicolor

He studied the note until it was time to disembark. The office building where he worked was just across the street from the subway stop. When he arrived at the entrance, he peered through the glass door and saw Yulla, the security guard he'd relieve, seated at the table near the elevators. He then set a penny on his nose and rapped loudly on the door. He startled her, but then when she realized it was him she got up and crossed the vast austere lobby to let him in.

"Howdy-do stranger," Richard said.

"Hello." Her mouth always went awry when she smiled. She turned away and led him back to the table. She was tall and slender. The clip clop of their feet against the tiles echoed and reverberated throughout the cavernous room.

"Hey, what's that on your proboscis?"

"Abraham Lincoln."

What are you up to?"

"I now wear a penny on my nose whenever I leave my apartment; it helps me keep my chin up."

"Amazing--that's wonderful." She brushed her long hair back, as it often slipped down over her angular face.

He took off his coat. "Watch this." Richard then demonstrated how he could jump up and down, spin around, and shake his head without losing the penny. "The only time it ever falls off is when it's bitter cold or windy outside."

"Really?" she said incredulously.

"Indeed."

"If I kiss you, the penny will slide right off your nose," she declared.

"I don't know, Yulla." He blushed.

She watched him with her mocking smile and then unexpectedly, pressed her body tight against his. She touched her lips to his and opened her mouth wide. Richard closed his eyes. The penny soon tumbled off his nose.

The following morning, his psychiatrist phoned:

"Hello Richard?"

He cleared his throat, "Yes?"

"Richard, this is Betty Glibster--I hope I didn't wake you."

"I was sleeping."

"Oh I'm sorry. I phoned yesterday evening, but you were out--it's been hectic around here with my secretary away on vacation..."

"I must have been at work when you called."

"Anyway, I've called to remind you that your appointment is at noon

today rather than three."

"I don't know Dr. Glib..."

"Last week you said noon would be fine."

He reached over and picked up a penny from the pile of change on the window sill. "It's not a question of what I said last week." He cleared his throat. "I want to discontinue our sessions."

A long silence ensued. He imagined she was sitting behind her grand antique oak desk gazing at the oversized abstract painting above the black vinyl couch. Dr. Glibster had a stout build, and her only outstanding feature was the large mole centered on her brow.

"This is abrupt," she declared. "Why do you not wish to continue?"

"Well," he hesitated, "I think I've gotten as much as I can from psychotherapy at this point in time." He set the penny on his nose.

"Richard, just last week you discussed how desperate you felt." She struck a match. Although she smoked, she never smoked during sessions. "I think I'd like to know why you've decided to discontinue."

"I just want to live my life without having to depend on psychotherapy."

"Psychotherapy is a tool, not a crutch!" She then softened her tone. "Regardless of your decision, as a courtesy, you should still come in at noon. We've worked together for almost a year now and I think..."

"Noon?" He sighed, "all right." He hung up without saying goodbye. Then, when he bent down to pick a ball of lint off the floor, the penny slipped off his nose.

He stood before the window inside his bedroom: the view from outside projected onto his face. The sky overcast, he looked ghostly. Richard concentrated on the aperture. The aperture appealed to him as an alchemical device. --He gave it the power to transform ambiguity into focused light. As of yet, he hadn't decided whether or not to explain the penny to Dr. Glibster.

He then left his apartment and moments later stood beside Block Avenue. He set a penny on his nose and put on gloves. Ice filled the potholes in the street. He shivered and watched his nose with crossed-eyes, lest he lose the penny.

And Richard thought about how, at that very moment, his image projected onto the ceiling of his bedroom.

Rubber Camera Obscura For Viewing Elastic Realities

Materials: Synthetic rubber, genuine rubber membrane focusing screen, and glass element lens.

Dimensions: 5½" X 5½" X 9".

The RUBBER  
CAMERA OBSCURA  
FOR VIEWING  
ELASTIC REALITIES  
is an optical  
aid. It bends  
or stretches  
according to  
need.



The rubber  
body is resilient  
and extremely  
durable; it can  
withstand com-  
pressive forces  
of over fifty  
pounds per  
square inch.

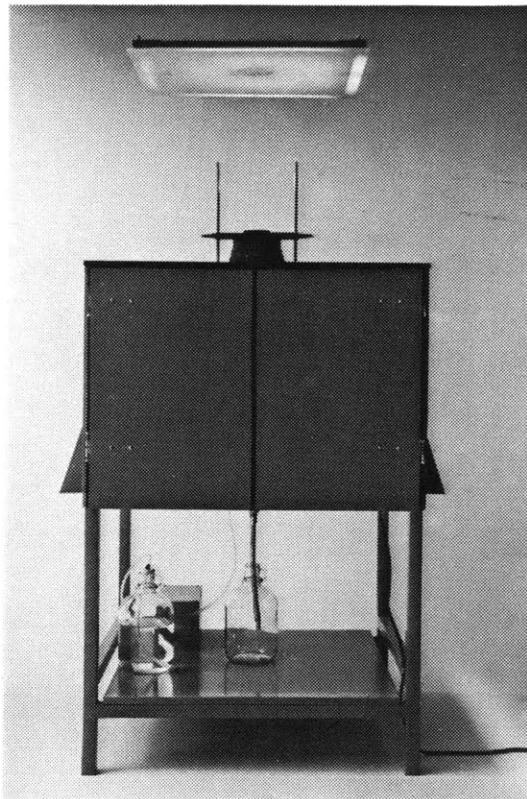


### III. Beyond the Camera Obscura: My Projection Apparatuses

## Plant In Box

Materials: Wood, enamel paint, fluorescent and incandescent lamps, thermostat switch, water pump, glass jugs, optics, and miscellaneous hardware.

Dimensions: 3' X 3' X 6' (less screen).



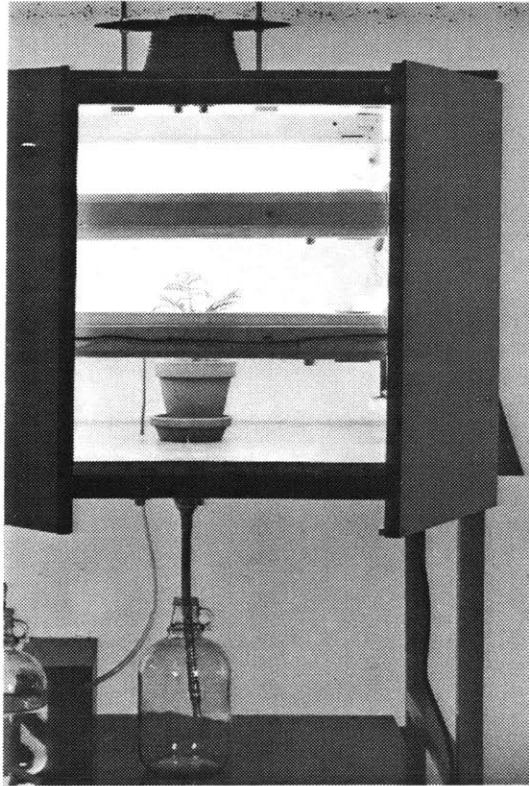
PLANT IN BOX



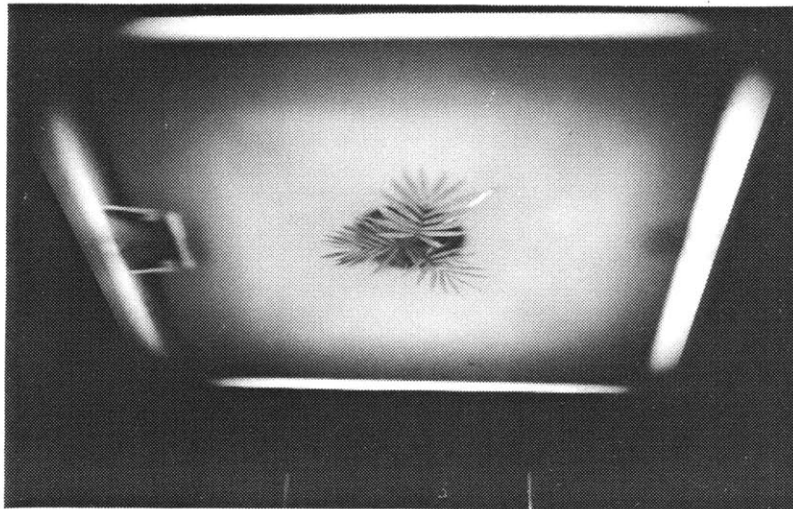
The PLANT IN BOX is, essentially, an opaque projector. The environment inside the projector must accommodate life because the subject of the projection is a living plant. Support mechanisms have thus been installed to regulate the temperature and automatically water the plant. A ventilation fan has also been installed.

The viewer is only permitted to see the plant as a projected image. The electric fan is placed near the plant. The plant sways back and forth as its image is projected onto the screen suspended from the ceiling. The growth of the plant, from week to week, is witnessed from the projected image.

Motion pictures usually originate from a reel of motion picture film. All films are documents of past events. Instead of using a film, I have placed a living plant inside a projector. The plant exists in real time instead of film time. It ages as we do and makes no claim to immortality.



PLANT IN BOX  
(interior view)

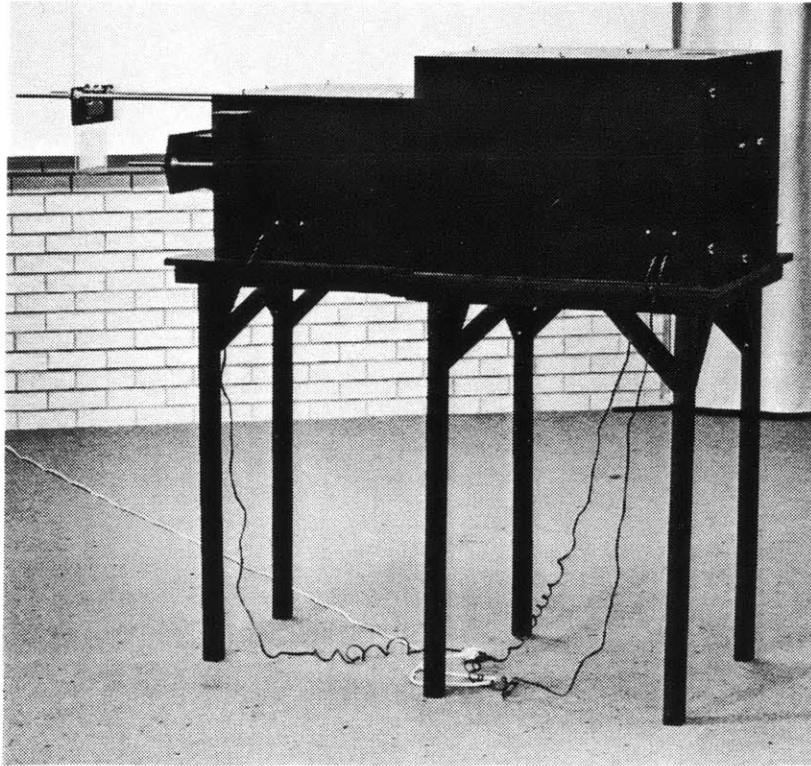


PLANT IN BOX  
(Oblique view of image projected onto the screen.  
The white lines bordering the screen are fluorescent tubes. The trapezoidal form at the middle of the left edge is the electric fan. The white spoke radiating from the plant at a 45° angle is the water faucet.)

## Fish Projection Box

Materials: Aquarium, water heater, air pump, automatic fish feeder, optics, motorized disc shutter, wood, miscellaneous hardware, luminous paint, glass, and Blind Cave Tetra Fish.

Dimensions: 5½' X 2½' X 4½'.



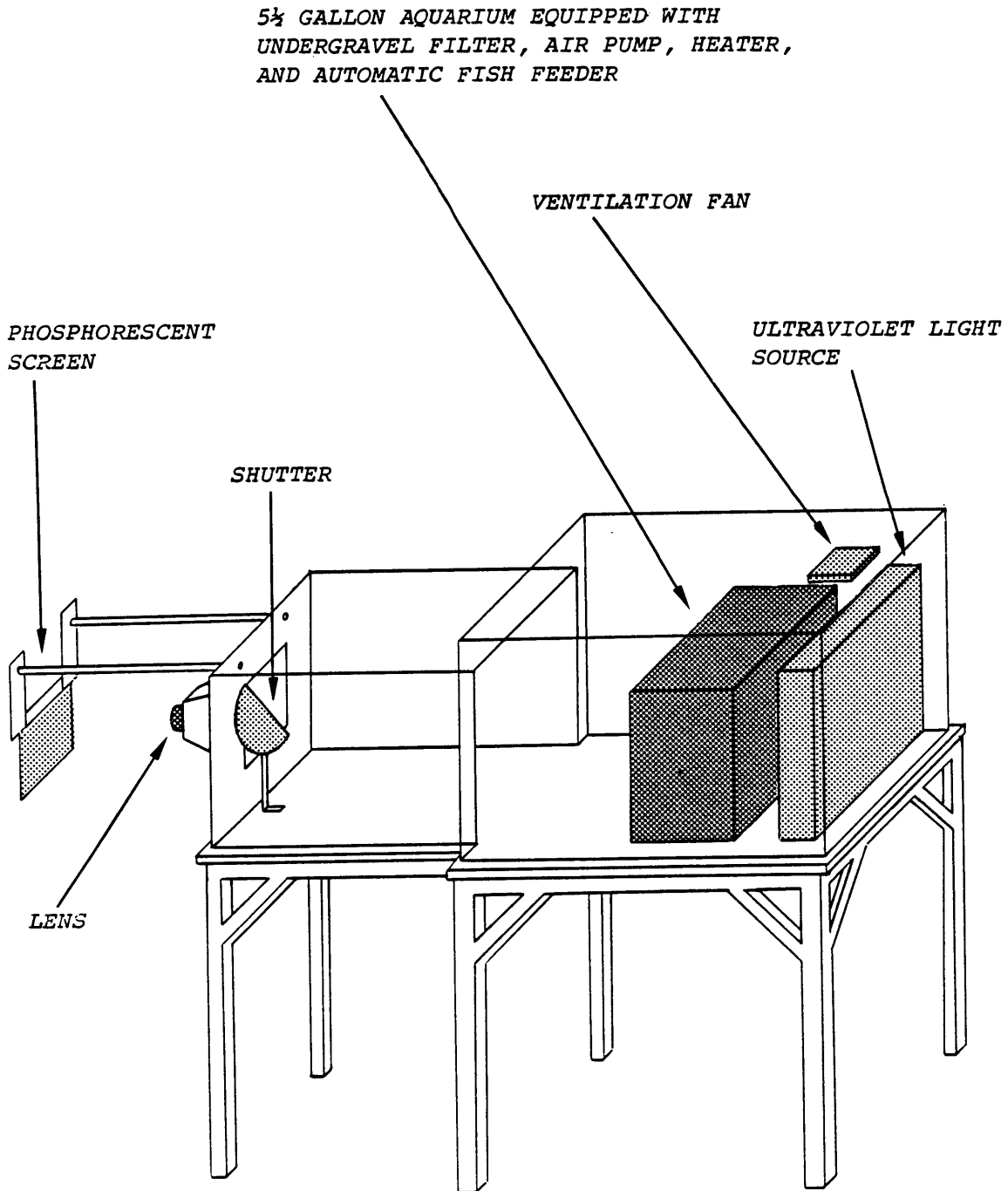
FISH PROJECTION BOX

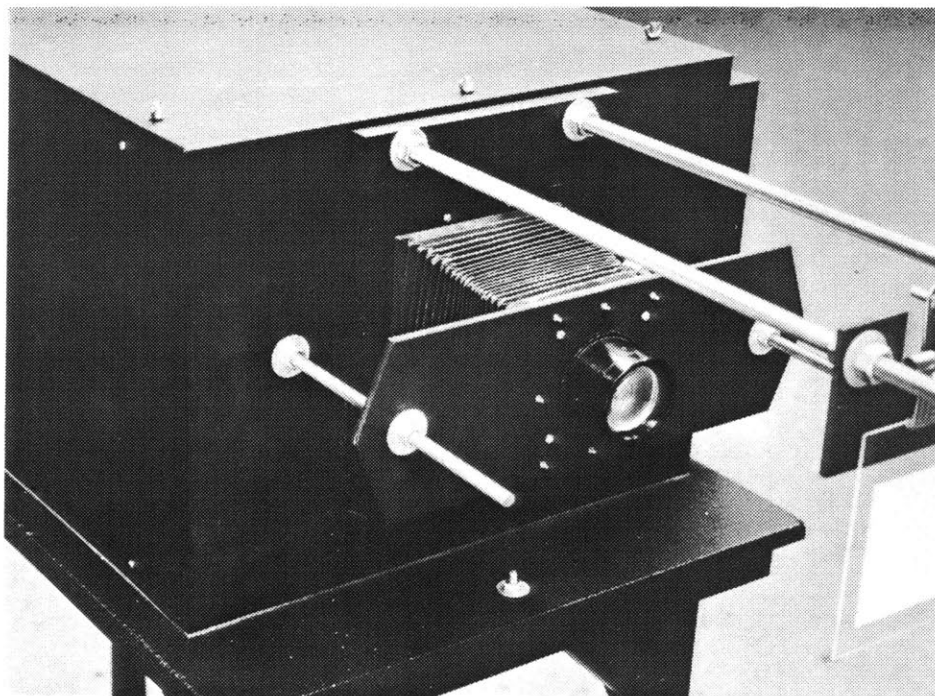
The FISH PROJECTION BOX ascended from the PLANT IN BOX. Fishes are, generally, more advanced biologically than plants, and the technology required to keep them alive is correspondingly more intricate. (Please refer to the schematic drawing.) The viewer sees the fish, inside the sculpture, by looking at a projection. The projector screen is coated with luminous green paint so that the fish are rendered only as monochromatic green spots followed by trails or shadow afterimages. The trails are, in fact, tracings drawn on the luminous screen by the moving fish. When the shutter behind the lens closes, the entire image on the screen freezes and gradually decays. New images only appear when the shutter opens.

The FISH PROJECTION BOX is equipped with ultra violet lamps. UV light excites luminous materials more than white light. One disadvantage to UV light is that after ten minutes of continuous exposure most fishes are blinded. Fortunately, Blind Cave Tetras are without eyes and are, therefore, oblivious. It is ironic that only eyeless fish are able to function in this visual art setting.

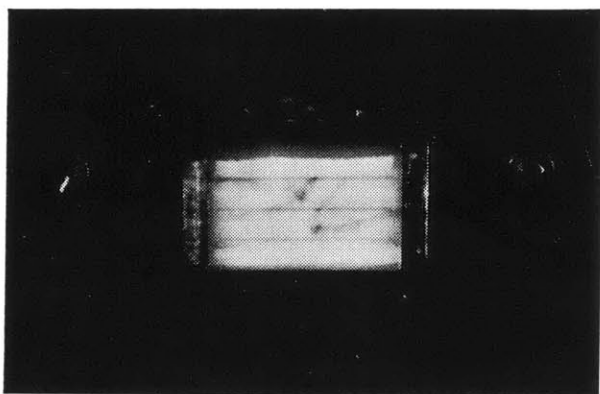
An image formed with a lens is a two-dimensional, upside down, reversed rendition of three-dimensional space. Images formed on our retinae are also topsy-turvy and yet we perceive them as being oriented correctly. The FISH PROJECTION BOX exists as a metaphor: what we perceive through our senses is analogous to the crude and abstract image rendered on the tiny screen. The size of the screen is absurdly small in relation to the projection/life support apparatus.

SCHEMATIC OF FISH PROJECTION BOX





FISH PROJECTION BOX

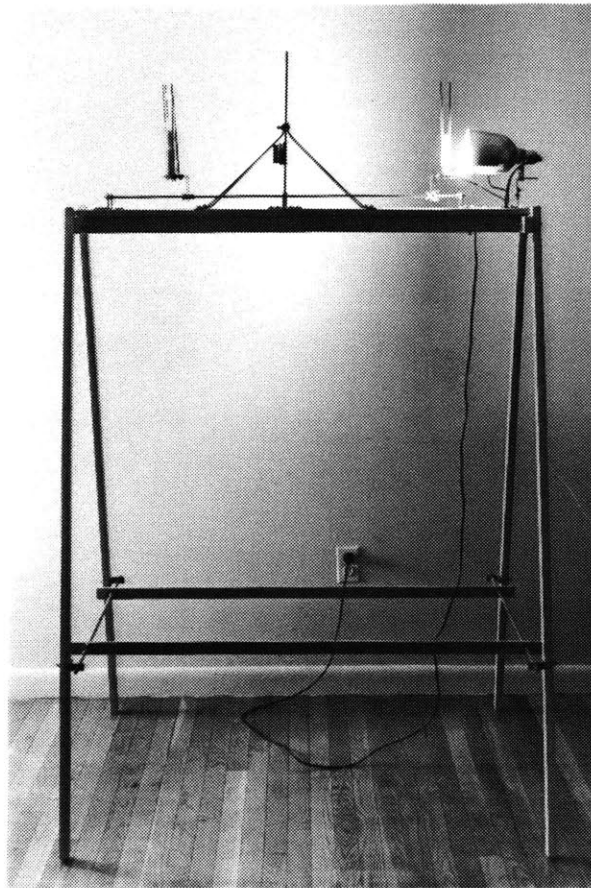


FISH PROJECTION BOX  
(View of phosphorescent screen.  
The fish trails are rendered as  
dark smears; the four horizontal  
bands are the blacklight tubes.)

## Wonder Bread Motion Picture Projector

Materials: Wood, incandescent lamp, electric fan, miscellaneous hardware, lens, and Wonder Bread.

Dimensions: 4' X 3½' X 6½'.



WONDER BREAD MOTION PICTURE PROJECTOR

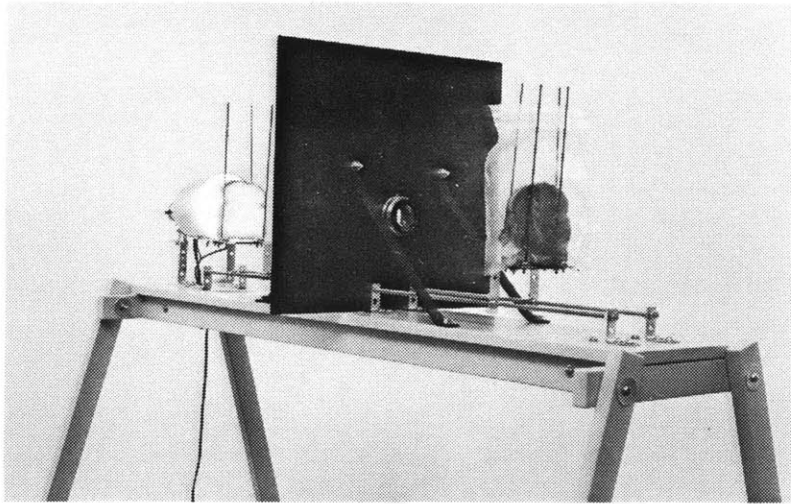
The WONDER BREAD MOTION PICTURE PROJECTOR exists as an absurd proposition about motion pictures and projectors. All movie projectors are equipped with an optical system, a motion device (film transport mechanism), and a light bulb. A movie screen and reel of film are not part of the device but are essential. The WONDER BREAD MOTION PICTURE PROJECTOR substitutes Wonder Bread for film, motion device, and screen.

The slice of bread which functions as a movie screen is kinetic because it is hermetically sealed inside a plastic sandwich bag. The bag seals in moisture so fungi readily grow on the bread. The moldy screen is dynamic because it decays. As it ultimately disintegrates, the projections disappear.

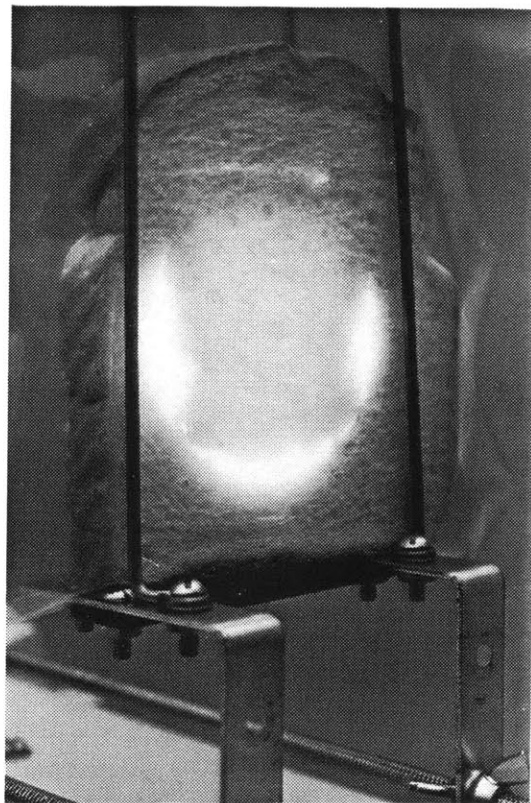
The slice of Wonder Bread from which the projection is made is static because it is not protected inside a plastic bag. It is dehydrated by the lamp and electric fan. Dehydrated bread is incapable of supporting fungi.

Life nurtures decadence. Decadence initiates change. Change implies movement. Movement is motion. The theme of the WONDER BREAD MOTION PICTURE PROJECTOR is decadence.





WONDER BREAD MOTION PICTURE PROJECTOR



WONDER BREAD MOTION  
PICTURE PROJECTOR  
(a slice of bread  
projected onto a  
fresh slice of bread)

#### IV. About My Lexicon

## About My Lexicon

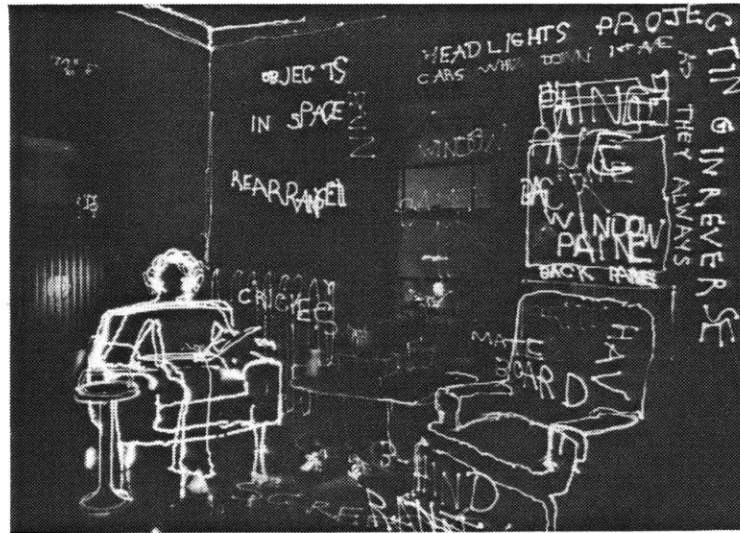
My media consist of optics, light, and gadgetry. These elements are combined to create metaphorical instruments. Just as microscopes and telescopes extend our vision, so is the intention of my sculpture. The following discussion will reveal how my lexicon has evolved:

I became interested in photography as a teenager growing up in Omaha, Nebraska. My first serious photographs were imitations of the crisp and clear nature pictures of Edward Weston and Ansel Adams. My photographs exhibited technical finesse, but they were boring. The eastern Nebraska countryside, with its endless rolling corn fields, did not rival the majestic Yosemite National Park Ansel Adams photographed, nor the central California coast of Weston's photographs. However, my wandering around the Nebraska countryside in search of subjects, spawned my reverence for the intense midwestern summer heat, the drone of cicadas, and the buzz sound of central air conditioners. This invisible landscape of heat and sound, far more intriguing than the visible, revealed mysteries of its own which neither my vision nor my camera could penetrate. It was then that I learned the difference between sights for the eye, sights for the camera, and sights for the mind. The tedious visual landscape seemed to be only a backdrop for another, more mystical, setting.

Now my interest centered on photographing invisible landscapes. Since the camera is blind to odor, sound, and temperature, a method using light to translate/communicate such phenomena had to be devised.

Photography often transforms ephemeral events into two-dimensional representations. One example of this is the way a camera records the

headlights of an automobile, in motion, at night as continuous parallel white lines. The idea of using a flashlight to draw photographically evolved from thinking about how the camera perceives moving headlights. A series of photographs followed which involved setting up the camera in various dark settings, opening the shutter, and then using the flashlight to comment about the invisible landscape by applying light to film in a manner as deliberate and expressive as brushing paint onto canvas.



FLASHLIGHT PHOTOGRAPH #10  
(reproduced from the original color transparency)

The flashlight photographs succeeded in revealing aspects of the invisible landscape mostly through the use of words. After awhile, it seemed futile to continue using words--telegrams. I wanted my art to show, rather than simply tell. This impetus led to my first sculpture, TABLE AND CHAIR FOR CAMERA OBSCURA. Sculpture liberated me from the two-dimensional world of photography. Now it was possible to exploit fully time and space.

Not by chance, TABLE AND CHAIR FOR CAMERA OBSCURA is, in part, the product of my being stereo-blind. Stereo-blindness means not being able to perceive depth. This is caused by an inability to fix exactly on the same point in space with both eyes. (Cross-eyed people are stereo-blind.) The simplest way to understand the nature of stereo-blindness is to cover one eye with a patch and then perform a task such as parking a car or batting a ball. Without the cooperation of both eyes, the world looks two-dimensional and your ability to judge distances and perceive spatial relationships is greatly impaired.

The camera obscura in TABLE AND CHAIR FOR CAMERA OBSCURA generates propositions about the nature of perceptual limitations; it illustrates metaphorically the inherent defects of human perception. Our visual perception of reality is limited to visible light. Visible light constitutes only a narrow band of the electromagnetic wave spectrum. The image rendered by a camera obscura is more limited; it is a two-dimensional facsimile of visual reality. Since camera obscura is a man-made device, the nature of its perceptual limitations are more apparent than our own.

My sculptures resemble nineteenth century electrical and optical inventions. Early devices looked clunky and awkward, and yet they were often well-crafted out of hardwood, brass, and steel. This combination of awkwardness and pure materials gave the first telephones, cameras, and phonographs an elegance which is absent in modern machines and instruments. The only formal difference between a computer and an air conditioner is the size of the cabinet. The advent of plastics and assembly lines has led to insipid product designs. My sculptures, constructed by hand mostly from pure materials, are a tribute to nineteenth century inventions.

The design of FISH PROJECTION BOX was derived from the first motion picture studio, "Black Maria," built by Thomas Edison in 1889. The "Black Maria" resembled a wooden barnlike structure that had been covered with tar paper. It rested on a giant turntable, and its roof could be raised to let in sunlight. (Early cinema film required strong light.)

The "Black Maria" was an ominous looking structure. It evokes memories of the forlorn and decrepit old farm implements and dwellings I occasionally stumbled upon throughout my wanderings in rural Nebraska. Those abandoned artifacts had a haunting effect. As if portending doom, they amplified the yapping of a dog half a mile down the road, or caused a swarm of bees to cross my path. (The thought of an encounter with a maniacal farmer always made me shudder.) Although I've only seen the "Black Maria" in photographs, its impact has shaped my attitude about cinema. It symbolizes, for me, what the cinema is: Images flitting across a screen, inside a dark chamber where imagination succumbs to illusory space and time.

PLANT IN BOX, FISH PROJECTION BOX, and WONDER BREAD MOTION PICTURE PROJECTOR are essentially miniature motion picture studios. They are manifestations of my reverence for the "Black Maria." The sculptures render staged events as dynamic, two-dimensional images by use of simple optical arrangements and not by motion picture cameras. (The projections are produced in a manner similar to how a camera obscura works.)

The sculpture projections are small and feeble compared to cinematic projections and must be viewed in absolute darkness. The gallery serves as a black void and the dim projections function as navigational cues. Consequently, the viewer flounders around in the darkness until landing

within viewing range of the projections. After awhile, the viewer's eyes adapt and he/she perceives the actual form of the sculptures. The sculptures appear absurdly large in relation to their "postage stamp" size projections. Motion picture studios are always larger than the illusions they create.

The austerity of the dark gallery punctuated by only a few patches of light (projections) is analogous to situations Franz Kafka portrays in his stories. Kafka renders the ordinary as extraordinary by depicting reality as a vast, dark, and seamless psychological landscape. His protagonists are driven--they strive to be enlightened by moving through the darkness. Kafka's themes are a testimony of the essential absurdity and tragedy of life. The activity of floundering around in the dark gallery to get close to the tiny patches of light is intended to mirror how we struggle throughout our lives to become enlightened.

The sculptures I make are ultimately the outcome of my living in a highly developed technological environment. My apartment building is a seven story brick box. It is filled with television sets, radios, and innumerable labor-saving electrical appliances. These devices certainly outnumber the tenants. All of my banking matters are transacted via computerized machines. The telephone makes it possible to let days pass without having to talk to anyone face to face. Sometimes the technological environment is so overwhelming, that it puts me into a trancelike state. The best way to understand the nature of this trancelike state is to either drive through an automated car wash while listening to Muzak over the radio, or watch a Jacques Tati film.

The films of Jacques Tati (French filmmaker/actor, 1908-1984) satirize this gadget-obsessed twentieth century. Tati's use of camera and microphone amplified the sights and sounds of kitchen appliances, radios left unattended, automobiles, plate-glass doors opening and closing, and a plethora of other modern devices. In his films, the sights and sounds of gadgets and electrical appliances serve as vehicles for telling stories-- words spoken by actors merely exist incidentally. His films portray anti-septic modernity so deftly, that the audience is struck by the absurdity of living in an overdeveloped technological environment.

My sculptures satirize the technological environment; they are spurious scientific optical devices. I write about and photograph them in a hybrid style--a combination of dry technical cataloguing and consumer advertising techniques. The texts and photographs are then compiled so as to assume the guise of consumer products literature. This allows the sculptures to exist outside of a gallery setting. (Perhaps the gallery is, in essence, a factory showroom.) The literature transforms the sculptures into contraptions resembling those Jacques Tati portrayed in his films. The literature also seems to mitigate their Kafka-like qualities.

Optics, light, and gadgetry are my media. My art is intended to function metaphorically as a camera obscura. The sculptures, photographs, and writing attempt to render reality into terms and images that are more manageable and easier to grasp than reality itself.

Robert Rosinsky  
8 May 1984